

BOOK REVIEWS

Conservation of Faunal Diversity in Forested Landscapes.—R. M. DeGraaf and R. I. Miller, eds. 1996. Chapman and Hall, New York. xxi + 633 pp., 14 color plates, 90 text figures, 62 text tables. ISBN 0-412-61890-7. \$89.95 (cloth).

This volume is a refreshingly comprehensive treatment of both the diverse threats to forest biodiversity and suggested solutions to problems faced by forest wildlife populations (and wildlife conservationists) globally. As promised, the book takes a large-scale geographic perspective in most chapters. Several important common themes emerge, such as the value to both populations and entire faunas of habitat mosaics that mimic effects of natural disturbances. The book assembles various perspectives on the conservation of faunal diversity, including historical ecology, contemporary status of wildlife faunas, single species analyses in relation to specific forestry practices, methodological reviews (e.g., large-scale mapping), ecology of disturbances, and restoration prospects in particular faunas or regions. Numerous chapters show convincingly the effect of human land-management policies on biodiversity, out of which emerge valuable practical recommendations in many chapters. I was pleased to see the editors and one author articulate the root cause of wildlife's plight globally: "All in all, the importance of these different deforestation factors depends on the influence of human population pressure . . . all factors are related to the increase in human population and the demand that humans place on resources" (Kittredge, p. 42).

The book contains much of interest to ornithologists, including five chapters (of 17) exclusively about birds, and many others with relevant perspectives or methods. The first of these bird chapters is Erwin's informative review of forested wetland and waterbird status in North and Central America. He defines types of wetland, tabulates how waterbirds (here including Pelicaniformes, Ciconiiformes, and Anseriformes) use forested wetlands, provides extensive information about sites and species of particular conservation concern, and discusses present-day knowledge (or lack thereof) about population trends and causes in particular species. Erwin provides a good list of management recommendations, including the needs for habitat restoration, for juxtaposing forested with nonforested wetlands in landuse planning, and for improved public perceptions of wetlands as far more than wastelands.

Capercaillie (*Tetrao urogallus*) population declines apparently are one of the costs of modern (industrial) forestry practiced throughout Fennoscandia, as documented by Sjoberg's chapter. This species is a large, attractive grouse of old-growth European forests. Direct impacts of forestry practices on Capercaillie include both reduced habitat area and increased fragmentation thereof, both of which reduce areas for lek mating arenas, and loss of ground cover, which increases predation risk for the hen and chicks. Indirect effects of forestry include increased predation by opportunist predators including the introduced red fox

(*Vulpes vulpes*), and reduction of food provided by the insects and fruit on bilberry (*Vaccinium myrtillus*). Many compelling management recommendations are presented, and the bird and its habitat are attractively documented in color plates.

Fuller's chapter reviews the population and conservation status of North American forest raptors. He identifies impacts on populations of various forest practices, including timber harvest methods, fire suppression, even-aged stand management, and grazing. He reiterates the theme that we lack crucial biological information on which to base conservation decisions, such as population status of a number of raptor species. He also argues compellingly for the need to maintain within a landscape a mosaic of different-aged habitats (86% of "forest" raptors use late successional forests, 94% use nonforest habitats). The value to biodiversity of regional habitat mosaics, a theme stated by almost every author, is an imperative message for all those entrusted to manage natural resources. This chapter also mentions examples of constructive raptor management (e.g., the Spotted Owl [*Strix occidentalis*] Recovery Plan), and states the need for adaptive management.

Pekka and Niemi's chapter details recent boreal forest bird community dynamics. Population and community variability is discussed in relation to climatic variability, mast fruit (seed) crops of many tree species, vegetation succession, and features of forest landscape ecology. The authors contrast the increase of migrant birds with forest age in North American boreal forest versus the decrease with forest age in Europe, and they explain this in the context of proportionally more migrants wintering in forested habitats in the New World compared with Africa. A consequence of this contrast is that intensive forestry practices, which tend to create early successional vegetation, tend to favor migrants in Europe, but not in North America.

The fifth chapter exclusively on birds is Rappole's too brief (few references, little synthesis) chapter on temperate-tropical avian migration systems. He emphasizes the North American-Neotropical system, although he mentions migration systems globally, and argues convincingly that forestry practices in both summer and winter are negatively impacting many migratory bird populations. Rappole dramatizes the impact of forest loss in Mexico and Central America using the Wood Thrush (*Hylocichla ustulata*) population, which is declining an estimated 4% per year. Interestingly, this species also was chosen to illustrate the "Ecosearch" model developed to identify potential wildlife habitat using summer vegetation physiognomy and remote sensing techniques (chapter by Short, Hestbeck, and Tiner). Rappole's conclusions about Wood Thrush declines have troubling implications for models such as Ecosearch, because patterns of habitat use could be changing independently of summer habitat structure. I would argue in general that vegetation-based habitat models, used widely by wildlife managers, should be used cautiously because populations

are sometimes unexpectedly limited by factors potentially not correlated with vegetation structure (including some food resources, predators, and pollutants such as pesticides and heavy metals).

Other chapters with frequent reference to birds include a brief review of hurricane impact on wildlife (Wunderle and Wiley), Angelstam's fascinatingly detailed and comprehensive review of forest disturbance history in northern Europe and northern Asia designed to illustrate ways to restore biologically diverse forests today, and Recher's excellent review of practical efforts to conserve Australia's vanishing vertebrates of eucalypt forests using both forest corridors and those of the political establishment.

My disappointments with the book included the limited information on population genetics and ecological economics. The book definitely emphasizes the biological and wildlife perspectives, with much less discussion than I would have liked of other conservation perspectives, including political, social, and legal. Stronger editing could have dealt with occasional wordiness, weak introductions to several chapters, near absence of chapter cross references, and a number of bewildering figures and tables. As expected in a multi-authored volume like this, the quality of the contributions varied, as did the amount and emphasis on *conservation*. Geographic coverage was impressively broad (New World, Eurasia, Australia, and Japan), but biased towards temperate and boreal ecosystems, with too little on low latitude forest faunas.

Despite these shortcomings, I found much of value, both for my teaching of Conservation Biology, and my research. I was stimulated to think at large geographic scales, and I valued the reviews of topics such as landscape ecology (Forman and Collinge), wildlife habitat classification and modeling (Gray, Cameron, and Kirkham), and ungulate population changes (Maruyama and Tokida on Japanese ungulates, and Cederlund and Bergström on Fennoscandian moose)—which are relevant to birds when habitats become overgrazed or overbrowsed. Interesting new ideas were presented on remote-sensing of habitats. The book contains a brief preface, good overview to each of the three sections of the book ("Prevailing contrasts in the status of forested biodiversity," "Habitat change and wildlife responses," and "Effective conservation tools and strategies"), comprehensive organismal and general indices, and brief conclusions. Most chapters are well and copiously referenced. This is an indispensable reference book for all college and university libraries, as well as personal libraries of conservation biologists, geographers, and wildlife biologists/managers.—THOMAS W. SHERRY, Department of Ecology, Evolution and Organismal Biology, 310 Dinwiddie Hall, Tulane University, New Orleans, LA 70118, e-mail: tsherry@mailhost.tcs.tulane.edu

Skuas and Jaegers: A Guide to the Skuas and Jaegers of the World.—Klaus Malling Olsen and Hans Larsson. 1997. Yale University Press, New Haven, CT. 190 pp., 13 color plates, 156 text figures, 7 maps. ISBN 0-300-07269-4. \$35.00 (cloth).

This handy-sized book was first published by Pica Press in the United Kingdom. To attract a wider au-

dience on this side of the Atlantic, Yale University Press seemingly modified the title of the book to include the vernacular name jaeger, a common usage in North America for certain members of the Stercorariinae. Otherwise, the name skua is used throughout the text for all seven of the widely recognized species. Scientific names for the subfamily are generally varied and subject to change because the taxonomy of the group is widely disputed. Nevertheless, the classification used by Olsen and Larsson is reasonable and very understandable. It could well endure the test of time.

The main thrust of this book is centered in its systematic section. Meaningful and useful are the field descriptions and clues but particularly the detailed descriptions of plumages and other anatomical parts. The authors left no stone unturned in tackling difficult subjects, namely age groups, seasonal variations, geographical variations, and other variants, etc. Scientific illustrations and photographs dispersed widely throughout the text were carefully selected to enhance the descriptions. Ornithologists will refer to this work when handling salvaged specimens of unknown origin and age. Conversely, I can hardly wait to test the descriptions by using several specimens of known origin and age at my disposal. All observers regardless of professional interests will find the descriptions covered by this book invaluable, whether on land or at sea.

Vocalization, diet, molt, breeding biology, migration and wintering are also included in the systematic coverage, but far less detailed, more debatable, and likely changeable with our ever increasing knowledge of the subfamily. One cannot help but wish that the book had been enlarged to accommodate a more complete coverage, but to have done so probably would have compromised the authors' objectives.

The thirteen plates by Hans Larsson merit special recognition. No doubt Larsson considered each of his subjects carefully, and with painstaking skill succeeds in portraying each individual in a manner that makes identification clues easy to grasp, not only for the beginner, but for the seasoned observer as well. Bold, often exaggerated, features in his illustrations accomplish these ends, even more so than the best of photos. In reviewing the many photographs in the guide, one quickly notes the existence of a surprisingly wide range in quality and clarity. One explanation for this apparent dichotomy relates to locality. The aggressive behaviors associated with this subfamily are well known. This aggressiveness, but also indifference, to humans are most pronounced on or near the nesting grounds, thus making the Stercorariinae among the easiest to photograph. On the other hand, photography is anything but easy on a bumpy sea where different species, age groups, and other variants suddenly appear most any time.

This book is truly a guide in that one does not sit down and read it from cover to cover during the course of an evening. Rather, one selects certain subjects from time to time, using the guide mostly as a reference. It is still a good read, but not entirely free of technical errors. Ironically, this reviewer's name was misspelled for five citations in the Bibliography; yet another used in the text was not even listed. Hopefully, these singular, minor infractions do not reflect widespread slop-

py editing. Overall, this is a superb guide that lends itself well to home and most other libraries. I for one cannot conceive of taking my next oceanic cruise without tucking a copy in my briefcase.—DAVID F. PARMELEE, Barrick Museum of Natural History, University of Nevada Las Vegas, 4505 Maryland Parkway, Las Vegas, NV 89154-4012, e-mail: djparmelee@msn.com

Munias and Mannikins.—Robin Restall. 1997. Yale University Press, New Haven, CT. 264 pp., 182 black-and-white illustrations, 80 color plates. ISBN 0-300-07109-4. \$60.00 (cloth).

Munias and mannikins are small granivorous birds distributed throughout tropical and subtropical Africa, Asia, and Australia. The 41 species that comprise the genus *Lonchura* are the subject of this book by noted illustrator and author Robin Restall. The book consists of introductory material, two sets of plates by the author, and individual species accounts. The first notable characteristic of the book, after the very attractive cover painting, is the very tiny print (8 point I think) which makes reading more difficult than it should be. Sonograms, provided for many species by Luis Baptista, are virtually unreadable because they are reduced to the 1-column (roughly 6.5 cm) width.

Restall begins by summarizing taxonomic relationships within *Lonchura*. For the most part, he eschews the genetic evidence (e.g., Sibley and Monroe 1990) as unproven and premature and prefers to rely on comparative behavior to determine relatedness. For example, he follows Goodwin (1982) and includes *Padda* within *Lonchura* and considers *Lonchura* part of Estrildidae rather than Passeridae.

The introductory section on munia natural history includes several general statements that are not supported by references or data: (1) males "tend to have heavier bills than females" (p. 16). From measurements given in species accounts and measured drawings, this statement might be supported in certain species, but sample sizes and sources of samples are not specified. (2) Species with larger feet (not stated how this is determined) inhabit river edges and marshy grassland as opposed to smaller-footed birds (e.g., silverbills) which do not (p. 17). No data are provided to support this generalization. (3) The discussion of effect of bill coloration on tendency of munias to clump and roost together (p. 18) is confusing and unsubstantiated. (4) In discussing sexual dimorphism, Restall states that in general "Males average up to 10% larger." It would be nice to know exactly how this was determined, but no supporting information is provided. Restall discusses potential usefulness of size and shape of tail feathers for sexing munias (p. 18) and provides examples with Nutmeg Mannikin *L. punctulata* from Kalimantan, Indonesia and some Chestnut Mannikin *L. malacca* specimens. Additional information (e.g., sample sizes, sources of samples) would be helpful to the reader in determining the value of those observations. (5) On page 21, the author states that nestlings of each species have "a distinctive pattern of black and white markings on the palate . . ." This might be true of most species, but palate markings of nestling White-rumped Munia *L. striata* are decidedly bright yellow and dark

gray. Throughout the book, there are many drawings of palate markings, all in black-and-white which limits their usefulness.

Following the introductory material are 16 color plates by the author depicting each species and many subspecies, adult and juvenile, in standard perched poses. On each plate, each species is cross-referenced to the page number of its species account and to its measured drawing (see below). This cross-referencing should also have been included on the measured drawings (plates 17–80).

There are 41 species accounts, which include distribution maps and numerous attractive line drawings by the author illustrating behavior, plumage patterns, etc. Most species accounts include ranges of measurements (total length, wing length, culmen, and tarsus) for each sex, but no sample sizes, means, or standard errors are provided. Nor does the author state whether mensural data are from wild-caught birds or aviary birds. Those measurements add unjustified credence to the author's assertion that males are generally 10% larger than females. For example, Restall gives wing length of adult male *L. striata subsquamicollis* as 49–52 mm, whereas female is listed as 48–50 mm (p. 82). In contrast, during a 2-year study in Malaysia (Avery 1978, 1980), I found wing lengths of 130 wild-caught birds, subsequently sexed by dissection, were identical between sexes (mean 48 mm, range 44–53). I suspect that detailed field study with appropriate sample sizes will eliminate the putative sexual dimorphism in other munia species as well.

I examined the first several species accounts in detail and noted numerous inaccurate or questionable statements. A small sample of these are offered as examples. The author states that the Madagascar Mannikin *L. nana* (p. 59) moves about in "family groups, which may include members of all the broods in a season." There is no citation of a field study that demonstrates that phenomenon. On page 60, the author states that "the bib has a purple sheen in fit birds." What constitutes a fit bird, and how is this determined? Is this a field observation or solely derived from aviary birds? Restall lists length of one exceptional male as 98 mm (p. 60), but length of a female is given as 98 mm on the measured drawing (plate 17).

The author states that *L. cantans*, the African Silverbill, has been introduced into Puerto Rico where it is now a very successful breeding bird (p. 62). In fact, it is *L. malabarica*, the Warbling Silverbill, that is established in Puerto Rico (Raffaele 1989).

The Bronze Mannikin, *L. cucullata*, is said to be "prolific, producing several broods in a year" (p. 69) and "A successful pair may produce up to four broods in a season . . ." (p. 70). Where does this information come from? Such a finding would require intense research with many marked birds, and to my knowledge no such study has ever been performed. A detailed study of Bronze Mannikin natural history (Woodall 1975) does not discuss frequency of nesting by individuals or number of broods per season or year. Furthermore, Thompson (1989) found the breeding season for Bronze Mannikins to be very marked and confined to 4 months which is sufficient time for 2 broods at most.

The Bronze Mannikin species account exemplifies another shortcoming of the book. In the introduction (p. 21), Restall states "Little is known, and even less has been published, of munia behaviour in the wild." I agree, but given the veracity of the statement, it is difficult to understand why the author ignores many pertinent field studies. For example, Woodall (1975) and Thompson (1989) present detailed, informative accounts of Bronze Mannikin natural history in Rhodesia and Sierra Leone, respectively. Neither paper is cited. Yet, information from Woodall (1975) is included in the book and not attributed to its proper source. On page 69, Restall gives dimensions of nests exactly as listed in Woodall (1975, p. 73), but Restall credits the source of the information as Brickell and Konigkramer (1994), a book about African aviculture. The reader is given the impression that the latter authors were the primary sources, while the appropriate, original source is unacknowledged.

The measured drawings, plates 17–80, which follow the species accounts are thoroughly absorbing. Birds are portrayed dorsally and ventrally with one wing spread, and also standing or perched in natural poses. Specific features and characteristics of the species or subspecies are illustrated in smaller drawings, and a small map shows the origin of the birds depicted. The author provides short, informative notes on each plate, and most include measurements of wing, tarsus, and beak. Restall's awesome talent as an illustrator is revealed in these plates.

Although undoubtedly the highlight of the book, the measured drawings are not without fault. In the very first species account, Madagascar Mannikin *L. nana*, the bird depicted in the measured drawings (plate 17) is an aviary form, not the wild type. The dark plumage and other attributes depicted are artifacts of captive breeding, not part of the species' natural biology. The same reservation holds for plate 18 (African Silverbill *L. cantans*) which is based on 4 individuals obtained in a London pet shop and "probably bred in captivity." The description of juvenile Bronze Mannikin states that the bill is black (p. 70), yet plate 20 depicts a juvenile with a pale bill. On plate 21, the "distinctive pale lavender blue" (p. 71) bill of Black-and-White Mannikin *L. bicolor* is gray, not at all distinctive.

Throughout the book, Restall emphasizes diversity and variation within species. His descriptions of each subspecies and measured drawings attest to those differences. His devotion to such details has resulted in the description of several new subspecies as well as, tentatively, a new species, Cream-bellied Munia *L. pallidiventer*, that is known only from specimens obtained from a bird dealer in Jakarta (Restall 1996). This book succeeds as a catalog of munia varieties and forms.

Nevertheless, it is difficult to determine for whom this book is intended. There is no clearly stated objective or a specified target audience. The book is frustrating because often there is no distinction between data derived from captive, aviary birds and data from wild, free-flying birds. Findings from captive birds do not necessarily translate to the field situation. In this book, the line between captive and free-flying birds is not blurred; it is erased.

The author's failure to reference primary sources of information from field studies seriously diminishes the value of the book. It would have been noteworthy to have summarized the available ecological and natural history information on this interesting group of birds, but this remains for someone else.—MICHAEL L. AVERY, USDA/APHIS/NWRC, Florida Field Station, 2820 East University Avenue, Gainesville, FL 32641, e-mail: dwrc-ffs@afn.org

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Avian Molecular Evolution and Systematics.—David P. Mindell, ed. 1997. Academic Press, San Diego, CA. 373 pp., 87 figures, 22 tables, 5 appendices. ISBN 0-12-498315-4. \$69.95 (hardbound).

This book is a compendium of 13 articles assembled from participants in a conference on avian molecular evolution held in 1995. Additional contributors were included to provide reasonable coverage to differing approaches or emphases. All topics generally relate to the use of DNA sequence information to address important major questions in avian systematics relating to evolution of behavior, morphology, and species groups. The first three chapters are grouped to provide discussion of the various DNA regions which can be informative for systematics. Each addresses problems which may be encountered based on the particular region(s) chosen. There are then five chapters that demonstrate the application of mitochondrial sequence data for addressing phylogenies in various avian taxa. The final five chapters describe uses of molecular phylogenies in addressing some intriguing questions in avian biology or behavior.

Overall, although all the individual chapters are well written, I was disappointed that the chapters were all highly separate entities. Accepting that this is a col-

lection of papers, much like a proceedings, some consistency is warranted. Some chapters included data, whereas others did not. For most chapters, there are phylogenetic trees or other figures presented, but little of the actual analyses are described, and so one is required to seek out the explanations and details in the primary literature. The first chapter demonstrates that there may be significant errors in studies which employ PCR-amplified mitochondrial sequences. There is ample evidence that in some vertebrate species mutated copies of mitochondrial regions reside in the nuclear compartment, so called Numts. However, most of the other chapters ignore this problem completely. The only chapter that does not use mitochondrial sequences describes uses of microsatellites as genetic markers, but it deals mainly with how microsatellites might be used. There was a single application to a question on mate selection in a single species of birds. The other examples were from mammals. For those chapters that use mitochondrial data, there is a nice diversity in the selection of which region to sequence (control region, rRNA, or cytochrome *b*) to contrast the level of resolution in each region. It would have been nice to see at least one chapter dealing with nuclear gene sequences.

I think the editor, David P. Mindell, has done well in assembling case histories of investigations in avian molecular evolution and systematics. It does give quick access to the state of the field and provides a reasonably broad sampling. I would hope that the editor would consider additional books on this same subject, perhaps in the form of a series where contributors would provide a snapshot of the state of the field. This would be a wonderful assistance to investigators and students interested in either the molecular aspects or systematics of avian species. The *Aves* are such a diverse but broadly studied group that books such as this one are quite valuable resources.

I highly recommend this book for those persons wishing to learn more about the state of molecular systematics in avian systems. The book would also be most appropriate for library collections. I would not recommend this book for persons who are not involved in avian research. The book also would not be very useful to those who are not at least tacitly facile in molecular techniques and systematics.—DOUGLAS D. RHOADS, Department of Biological Sciences, 601 SCEN, University of Arkansas, Fayetteville, AR 72701, e-mail: drhoads@comp.uark.edu

Avian Biochemistry and Molecular Biology.—Lewis Stevens. 1996. Cambridge University Press, New York. XIV + 272 pp., 109 line diagrams, 59 tables. ISBN 0-521-45510-3. \$80.00 (cloth).

Avian Biochemistry and Molecular Biology is a tremendously well done book that does a great service to those doing any aspect of ornithological research. The text covers a multitude of topics in avian biology with a thorough multidisciplinary approach that provides an in-depth review of many biochemical aspects of avian research. Citations are current, lending strength to the discussions in all chapters, while providing an extensive literature review that can familiarize the reader with the numerous topics discussed.

The book is written in 13 chapters within two major sections: "Metabolism" and "The Avian Genome and its Expression." Topics range from avian nutrition to the molecular bases of avian immunology. An initial introduction section sets the comprehensive tone of the book by reviewing avian biology principally through a taxonomic/evolutionary framework. This approach comes again in different parts of the book, particularly in discussion of avian mitochondrial DNA, and works very nicely in integrating wholly disparate aspects of vertebrate biology. Each chapter is extremely detailed for the subject(s) presented, and what's nice is that each is presented in a nontechnical format that allows an ease of understanding of the material Lewis Stevens is presenting. Biochemical jargon is kept to a minimum, and unfamiliar words are defined within the text lending assistance to the reader's understanding of the material.

Figures and tables are nicely presented and do well in illustrating the material within the text. Stevens leaves nothing to chance and provides very detailed schematic diagrams of the numerous biochemical pathways and nucleic acid maps discussed. The diagrams really help with such difficult subjects as genetic regulation of hormones, avian histones, and basic cellular metabolism.

Two of my favorite chapters were "The Avian Genome" (chapter 8) and "Avian Oncogenes" (chapter 11). As one of the many researchers doing molecular genetics/phylogenetics of avian species, I felt that these two chapters provide a very nice overview of genome organization within birds focussing in on the structure-function relationships of many of the genes mentioned and their respective products. Thus, many of these genes may become valuable phylogenetic markers in future systematics and population biology projects.

"The Avian Genome" covers everything from the C-value "paradox" through chromosome structure, the W sex-chromosome, mitochondrial genome, and ends with DNA fingerprinting techniques. The chapter, like others in the book, is well detailed and provides a robust overview of genetic composition, not just in birds, but across other taxonomic groups as well. The micro- and macroscopic aspects of genome organization are discussed, from the differential banding techniques (G-banding, C-banding, R-banding, Q-banding, Ag-AS staining) for identification of the types of chromatin (heterochromatin and euchromatin) to differential nucleotide "rich" regions like AT-rich and GC-rich. From this, the historical development of our understanding of chromosomal organization based on those banding patterns with cesium chloride gradients is discussed, leading into how the genome is organized into its various genetic elements (SINES, protein-coding genes, repetitive DNA sequences, etc.).

"Avian Oncogenes" touches a topic close to my life as the single-copy proto-oncogene *C-mos* necessary for oocyte maturation is an important part of my research. Although *C-mos* was not mentioned in the text of this book, all other avian oncogenes and proto-oncogenes (e.g., *c-fos*, *c-jun*, *c-myc*) and their regulatory functions within the cell are, and Stevens does a great job of synthesizing a voluminous amount of work done

on those genes. The mechanisms behind the neoplastic transformation of cells to become cancerous has been of widespread interest for many years beginning with the discovery of the "src" gene in Rous sarcoma virus by Martin (*Nature* 1970 227:1021–1023). The fact that retroviruses cause abnormal growth patterns in cells is significant because many forms of nonheritable cancers like leukemias are the result of viral transduction events where a provirus inserts a promoter upstream from a cellular proto-oncogene, inducing the gene to cause abnormal cell growth. The proto-oncogene is usually homologous to its viral counterpart and typically involved in cell cycle-regulation and cell maturation. Stevens' presentation of complex subjects such

as these, like he does with other subjects, is both simple and well written, allowing the reader to grasp the concepts without having much technical jargon to sort through.

Avian Biochemistry and Molecular Biology is a very good book. Hopefully, it will be a boon to ornithological research, as well as being an important book for the personal library of any postgraduate or graduate researcher who wants to keep abreast of the subjects in avian molecular biology. The book would be a very useful text for any comparative physiology, biochemistry, or molecular biology course—LOWELL OVERTON, Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701, e-mail: loverton@comp.uark.edu